

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number  
**WO 2005/013808 A3**

(51) International Patent Classification<sup>7</sup>: **A61M 29/00**

[US/US]; 1010 Yorkmont Ridge Lane #628, Charlotte, NC 28217 (US).

(21) International Application Number:  
PCT/US2004/025682

(74) Agent: **ALSTON & BIRD LLP**; Jason P. Cooper, Bank of America Plaza, 101 South Tryon Street, Suite 4000, Charlotte, NC 28280-4000 (US).

(22) International Filing Date: 9 August 2004 (09.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/493,402 7 August 2003 (07.08.2003) US

(71) Applicant (for all designated States except US): **ALVEOLUS INC.** [US/US]; 401 North Tryon Street, 10th Floor, Charlotte, NC 28202 (US).

(72) Inventors; and

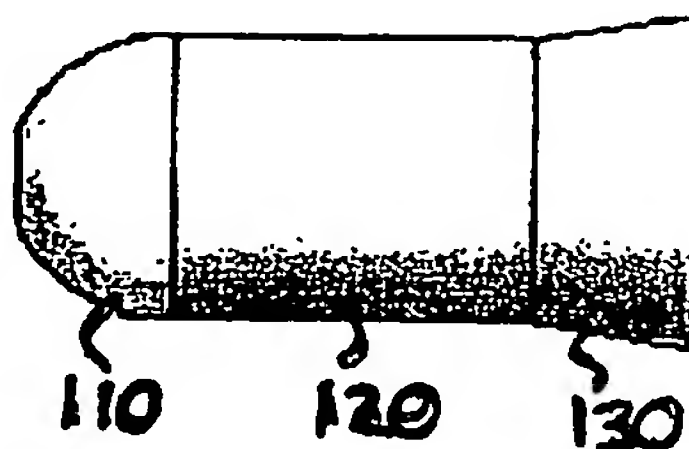
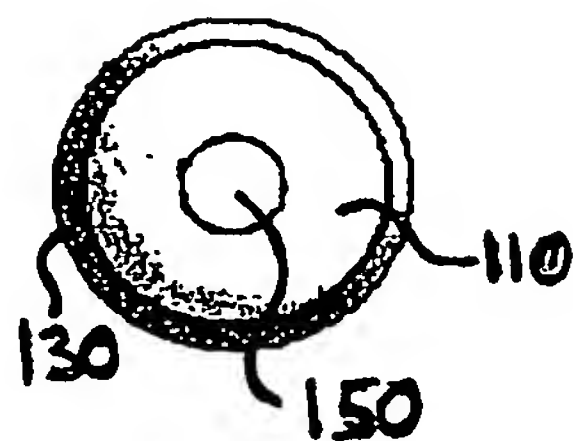
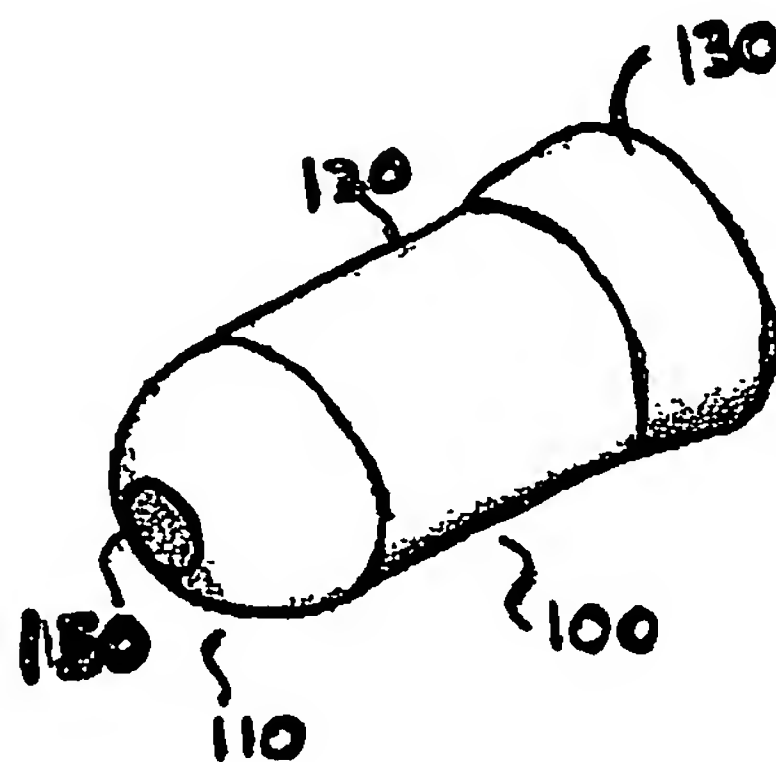
(75) Inventors/Applicants (for US only): **REYNOLDS, Jason, M.** [US/US]; 148 Ivey Drive, Charlotte, NC 28205 (US). **ALEXANDER, Tony, D.** [US/US]; 140 Deep Gap Court, Charlotte, NC 28217 (US). **YOU, Ji Hwan**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: THERAPEUTIC MEDICAL APPLIANCE, DELIVERY AND METHOD OF USE



(57) Abstract: The present invention, in an exemplary embodiment, provides a therapeutic medical appliance, delivery device and method of use. In particular, plug therapeutic medical appliances are provided that allow for the interventional treatment of pulmonary disorders such as defects characterized by pulmonary blebs and/or diffused destructive parenchymal disease. The plug therapeutic medical appliances themselves combine many of the excellent characteristics of both silicone and metal therapeutic medical appliances while eliminating the undesirable ones. In particular, these therapeutic medical appliances are preferably self-expanding in nature and allow the predetermined differential selection of relative hardness/softness of regions of the therapeutic medical appliance to provide additional patient comfort.

An exemplary embodiment also provides a family of delivery devices that facilitate flexibility, durability and/or proper installation of one or more medical appliances in a single procedure. Moreover, the preferred embodiment of the delivery device provides for the reloading of the delivery device with additional medical appliances for additional interventional procedures.

WO 2005/013808 A3



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,*

*IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*
- *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**(88) Date of publication of the international search report:**

18 August 2005

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*